<110>   Takeda San Diego, Inc.

<120>   CRYSTALLIZATION OF ISPA

<130>   SYR-IspA-5001-C1

<140>   10/651,668
<141>   2003-08-28

<160>   2

<170>   PatentIn version 3.3

<210>   1
<211>   314
<212>   PRT
<213>   Artificial

<220>
<223>   Amino acid sequence for full-length E. coli IspA with an
        N-terminal His-tag

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<222>   (1)..(15)
<223>   N-terminal His-tag

<220>
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Asp Phe Pro Gln Gln Leu Glu Ala Cys Val Lys Gln Ala Asn Gln Ala
            20   25   30

Leu Ser Arg Phe Ile Ala Pro Leu Pro Phe Gln Asn Thr Pro Val Val
        35   40   45

Glu Thr Met Gln Tyr Gly Ala Leu Leu Gly Gly Lys Arg Leu Arg Pro
    50   55   60

Phe Leu Val Tyr Ala Thr Gly His Met Phe Gly Val Ser Thr Asn Thr
65   70   75   80

Leu Asp Ala Pro Ala Ala Ala Val Glu Cys Ile His Ala Tyr Ser Leu
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Ile His Asp Asp Leu Pro Ala Met Asp Asp Asp Leu Arg Arg Gly
            100   105   110

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Leu Pro Thr Cys His Val Lys Phe Gly Glu Ala Asn Ala Ile Leu Ala
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Gly Asp Ala Leu Gln Thr Leu Ala Phe Ser Ile Leu Ser Asp Ala Asp
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Met Pro Glu Val Ser Asp Arg Asp Arg Ile Ser Met Ile Ser Glu Leu
145             150             155             160

Ala Ser Ala Ser Gly Ile Ala Gly Met Cys Gly Gly Gln Ala Leu Asp
                165             170             175

Leu Asp Ala Glu Gly Lys His Val Pro Leu Asp Ala Leu Glu Arg Ile
            180             185             190

His Arg His Lys Thr Gly Ala Leu Ile Arg Ala Ala Val Arg Leu Gly
        195             200             205

Ala Leu Ser Ala Gly Asp Lys Gly Arg Arg Ala Leu Pro Val Leu Asp
    210             215             220

Lys Tyr Ala Glu Ser Ile Gly Leu Ala Phe Gln Val Gln Asp Asp Ile
225             230             235             240

Leu Asp Val Val Gly Asp Thr Ala Thr Leu Gly Lys Arg Gln Gly Ala
                245             250             255

Asp Gln Gln Leu Gly Lys Ser Thr Tyr Pro Ala Leu Leu Gly Leu Glu
            260             265             270

Gln Ala Arg Lys Lys Ala Arg Asp Leu Ile Asp Asp Ala Arg Gln Ser
        275             280             285

Leu Lys Gln Leu Ala Glu Gln Ser Leu Asp Thr Ser Ala Leu Glu Ala
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Leu Ala Asp Tyr Ile Ile Gln Arg Asn Lys
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<210> 2
<211> 945
<212> DNA
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<220>
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<222>  (1)..(45)
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<223>  Sequence encoding full-length E. coli IspA

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cccttttcaga acactcccgt ggtcgaaacc atgcagtatg gcgcattatt aggtggtaag    180

cgcctgcgac ctttcctggt ttatgccacc ggtcatatgt tcggcgttag cacaaacacg    240

ctggacgcac ccgctgccgc cgttgagtgt atccacgctt actcattaat tcatgatgat    300

ttaccggcaa tggatgatga cgatctgcgt cgcggtttgc aacctgcca tgtgaagttt    360

ggcgaagcaa acgcgattct cgctggcgac gctttacaaa cgctggcgtt ctcgatttta    420

agcgatgccg atatgccgga agtgtcggac cgcgacagaa tttcgatgat ttctgaactg    480

gcgagcgcca gtggtattgc cggaatgtgc ggtggtcagg cattagattt agacgcggaa    540

ggcaaacacg tacctctgga cgcgcttgag cgtattcatc gtcataaaac cggcgcattg    600

attcgcgccg ccgttcgcct tggtgcatta agcgccggag ataaaggacg tcgtgctctg    660

ccggtactcg acaagtatgc agagagcatc ggccttgcct tccaggttca ggatgacatc    720

ctggatgtgg tgggagatac tgcaacgttg ggaaaacgcc agggtgccga ccagcaactt    780

ggtaaaagta cctaccctgc acttctgggt cttgagcaag cccggaagaa agcccgggat    840

ctgatcgacg atgcccgtca gtcgctgaaa caactggctg aacagtcact cgatacctcg    900

gcactggaag cgctagcgga ctacatcatc cagcgtaata aataa              945
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<110> Takeda San Diego, Inc.

<120> CRYSTALLIZATION OF ISPA

<130> SYR-IspA-5001-C1

<140> 10/651,668
<141> 2003-08-28

<160> 2

<170> PatentIn version 3.3

<210> 1
<211> 314
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<220>
<223> Amino acid sequence for full-length E. coli IspA with an
       N-terminal His-tag

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<220>
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<223> Full-length E. coli IspA

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Met Gly Ser Asp Lys Ile Ile His His His His His His Thr Leu Met
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Asp Phe Pro Gln Gln Leu Glu Ala Cys Val Lys Gln Ala Asn Gln Ala
            20   25   30

Leu Ser Arg Phe Ile Ala Pro Leu Pro Phe Gln Asn Thr Pro Val Val
            35   40   45

Glu Thr Met Gln Tyr Gly Ala Leu Leu Gly Gly Lys Arg Leu Arg Pro
    50   55   60

Phe Leu Val Tyr Ala Thr Gly His Met Phe Gly Val Ser Thr Asn Thr
65   70   75   80

Leu Asp Ala Pro Ala Ala Ala Val Glu Cys Ile His Ala Tyr Ser Leu
                85   90   95

Ile His Asp Asp Leu Pro Ala Met Asp Asp Asp Leu Arg Arg Gly
                100   105   110

Leu Pro Thr Cys His Val Lys Phe Gly Glu Ala Asn Ala Ile Leu Ala
        115   120   125

Gly Asp Ala Leu Gln Thr Leu Ala Phe Ser Ile Leu Ser Asp Ala Asp
    130   135   140

Met Pro Glu Val Ser Asp Arg Asp Arg Ile Ser Met Ile Ser Glu Leu
145   150   155   160

Ala Ser Ala Ser Gly Ile Ala Gly Met Cys Gly Gly Gln Ala Leu Asp
            165   170   175

Leu Asp Ala Glu Gly Lys His Val Pro Leu Asp Ala Leu Glu Arg Ile
        180   185   190

His Arg His Lys Thr Gly Ala Leu Ile Arg Ala Ala Val Arg Leu Gly
        195   200   205

Ala Leu Ser Ala Gly Asp Lys Gly Arg Arg Ala Leu Pro Val Leu Asp
    210   215   220

Lys Tyr Ala Glu Ser Ile Gly Leu Ala Phe Gln Val Gln Asp Asp Ile
225   230   235   240

Leu Asp Val Val Gly Asp Thr Ala Thr Leu Gly Lys Arg Gln Gly Ala
            245   250   255

Asp Gln Gln Leu Gly Lys Ser Thr Tyr Pro Ala Leu Leu Gly Leu Glu
        260   265   270

Gln Ala Arg Lys Lys Ala Arg Asp Leu Ile Asp Asp Ala Arg Gln Ser
        275   280   285

Leu Lys Gln Leu Ala Glu Gln Ser Leu Asp Thr Ser Ala Leu Glu Ala
    290   295   300

Leu Ala Asp Tyr Ile Ile Gln Arg Asn Lys
305   310

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<220>
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<223> Sequence encoding N-terminal His-tag

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<223> Sequence encoding full-length E. coli IspA

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cccttttcaga acactcccgt ggtcgaaacc atgcagtatg gcgcattatt aggtggtaag     180

cgcctgcgac ctttcctggt ttatgccacc ggtcatatgt tcggcgttag cacaaacacg     240

ctggacgcac ccgctgccgc cgttgagtgt atccacgctt actcattaat tcatgatgat     300

ttaccggcaa tggatgatga cgatctgcgt cgcggtttgc caacctgcca tgtgaagttt     360

ggcgaagcaa acgcgattct cgctggcgac gctttacaaa cgctggcgtt ctcgatttta     420

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attcgcgccg ccgttcgcct tggtgcatta agcgccggag ataaaggacg tcgtgctctg     660

ccggtactcg acaagtatgc agagagcatc ggccttgcct tccaggttca ggatgacatc     720

ctggatgtgg tgggagatac tgcaacgttg ggaaaacgcc agggtgccga ccagcaactt     780

ggtaaaagta cctaccctgc acttctgggt cttgagcaag cccggaagaa agcccgggat     840

ctgatcgacg atgcccgtca gtcgctgaaa caactggctg aacagtcact cgataccctcg     900

gcactggaag cgctagcgga ctacatcatc cagcgtaata aataa                     945
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